

### REMARKS

Applicant respectfully requests reconsideration and allowance of the subject application. Claim 10 was previously canceled without prejudice. Claims 1-9 and 11-36 are pending in this application.

#### 35 U.S.C. § 103

Claims 1-6, 8-9, 11-13, and 15-30 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,003,597 to Merkle (hereinafter "Merkle") in view of U.S. Patent No. 6,594,761 to Chow et al. (hereinafter "Chow"). Applicant respectfully submits that claims 1-6, 8-9, 11-13, and 15-30 are not obvious over Merkle in view of Chow.

Merkle is directed to method and apparatus for data encryption (see, Title). As discussed with reference to Figures 1 and 2 of Merkle, as well as the Abstract, the method uses part of the data input to access a table of pseudo-random numbers. The pseudo-random numbers are exclusively ORed (XORed) with the remaining part of the data input. The output from the XOR operation is then used to access the table where the other portion of the data is in turn XORed with the pseudo random numbers. This iterative process continues until the data is fully randomized.

Chow is directed to tamper resistant software encoding (see, Title). As discussed in the Abstract of Chow, the method of the invention is to increase the tamper-resistance and obscurity of computer software code by transforming the data flow of the computer software so that the observable operation is dissociated from the intent of the original software code. A number of techniques for

performing the invention are given, including encoding software arguments using polynomials, prime number residues, converting variables to new sets of Boolean variables, and defining variables on a new n-dimensional vector space.

In Applicant's response to the previous Office Action (the Office Action dated May 5, 2004), Applicant discussed how pending claims 1-9 and 11-36 are allowable over the cited references. Those discussions and arguments are hereby incorporated by reference in this response.

In the January 12, 2005 Office Action, it was stated that Applicant's previous arguments were not persuasive. The January 12, 2005 Office Action states, at ¶ 2, p. 2:

Applicant's arguments filed 8/10/2004 have been fully considered but they are not persuasive. Applicant contends that the cited prior art, Merkle (U.S. Patent No. 5,003,597), "discuss portions of a 64 bit clear text block being used to calculate an input to a S-box, not being used as the S-box itself". Examiner respectfully disagrees. Merkle teaches the first portion of the clear text is selected as an input to a S-box (or can be interpreted as generate S-box based on values in first portion) (e.g. Fig. 1 and col. 2, line 64-col. 3, line 6).

Thus, it appears that the position taken in the January 12, 2005 Office Action is that in discussing an input to an S-box, Merkle is somehow disclosing using that input to generate the S-box. Applicant respectfully submits that an input to a thing and the thing itself are different – calculating the input to the thing does not describe calculating the thing itself. The input to the S-box may be used to generate the output of the S-box, but not to generate the S-box itself.

The cited portion of Merkle (col. 2, line 64-col. 3, line 6) reads as follows:

The main body of the encryption method begins with the rightmost eight bits of  $L_0$  being used as input to an S-box. The

output from the S-box is a 32 bit entry which is then XORed with  $R_0$ .  $L_0$ , which was unchanged by its use to access the S-box, is then rotated according to a predefined rotation schedule. After its rotation, the 32-bit word is labeled  $R_1$  and used as the right half input in the next iteration of the encryption method. The output from the XOR operation of  $R_0$  and the S-box entry is labeled  $L_1$  and used as the left half input in the next iteration of the encryption method.

This cited portion of Merkle discusses inputs to an S-box, outputs from an S-box, and what changes are made to those outputs. However, nowhere does this cited portion of Merkle discuss selecting a portion of a digital good and using that portion as an S-box when encrypting another portion as recited in claim 1.

As there is no discussion or even mention in Merkle of selecting a portion of a digital good and using that portion as an S-box when encrypting another portion as recited in claim 1, Applicant respectfully submits that Merkle cannot disclose or suggest claim 1.

With respect to Chow, Chow is cited in the January 12 Office Action at ¶ 3, p. 3 for "using DES technique to obfuscate digital good for tamper resistant protection". Applicant respectfully submits that Chow is not cited as curing, and does not cure, these deficiencies of Merkle.

For at least these reasons, Applicant respectfully submits that claim 1 is allowable over Merkle in view of Chow.

With respect to claims 2-6, given that claims 2-6 depend from claim 1, Applicant respectfully submits that claims 2-6 are likewise allowable over Merkle in view of Chow for at least the reasons discussed above with respect to claim 1.

With respect to claim 8, Applicant respectfully submits that, similar to the discussion above regarding claim 1, Merkle in view of Chow does not disclose or suggest selecting a segment of a digital good and mapping, as at least part of the

encryption process, values within the other segment to new values based on the segment, wherein the mapping comprises using the segment as a substitution box (S-box) during the encryption process as recited in claim 8. For at least these reasons, Applicant respectfully submits that claim 8 is allowable over Merkle in view of Chow.

With respect to claims 9, 11-13, and 15-16, given that claims 9, 11-13, and 15-16 depend from claim 8, Applicant respectfully submits that claims 9, 11-13, and 15-16 are likewise allowable over Merkle in view of Chow for at least the reasons discussed above with respect to claim 8.

With respect to claim 17, Applicant respectfully submits that, similar to the discussion above regarding claim 1, Merkle in view of Chow does not disclose or suggest using at least a portion of a digital good as a substitution box (S-box) as recited in claim 17. For at least these reasons, Applicant respectfully submits that claim 17 is allowable over Merkle in view of Chow.

With respect to claims 18-24, given that claims 18-24 depend from claim 17, Applicant respectfully submits that claims 18-24 are likewise allowable over Merkle in view of Chow for at least the reasons discussed above with respect to claim 17.

With respect to claim 25, Applicant respectfully submits that, similar to the discussion above regarding claim 1, Merkle in view of Chow does not disclose or suggest a production server being configured to identify a first segment in the original program and use the first segment as an S-box when encrypting a second segment of the original program as recited in claim 25. For at least these reasons,

Applicant respectfully submits that claim 25 is allowable over Merkle in view of Chow.

With respect to claims 26-30, given that claims 26-30 depend from claim 25, Applicant respectfully submits that claims 26-30 are likewise allowable over Merkle in view of Chow for at least the reasons discussed above with respect to claim 25.

Claims 31-36 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Merkle in view of U.S. Patent No. 5,809,144 to Sirbu et al. (hereinafter "Sirbu"). Applicant respectfully submits that claims 31-36 are not obvious over Merkle in view of Sirbu.

Sirbu is directed to a method and apparatus for purchasing and delivering digital goods over a network (see, Title). As discussed in the Abstract of Sirbu, the method includes identifying a digital good to be purchased. A purchase price for the digital good is negotiated. After the negotiation step, an authenticated purchase request is sent to the merchant. The merchant encrypts the desired digital good and calculates a first cryptographic checksum for the encrypted good. The encrypted digital good and the first cryptographic checksum together with a timestamp are then transmitted to the customer. The customer calculates a second cryptographic checksum for the received encrypted digital good. The customer creates an electronic payment order containing information identifying the transaction, the second cryptographic checksum, credentials, and the timestamp. The electronic payment order is transmitted to the merchant. The merchant compares the first and second cryptographic checksums to ensure that they match, and if so, the merchant adds an electronic signature and a decryption key to the

electronic payment order. The merchant submits the merchant signed electronic payment order and the key to an account server for review. The account server reviews the information in the electronic payment order and sends a message, including the key if the review is positive, to the merchant. The merchant forwards the message to the customer. If the message contained the key, the customer uses the key to decrypt the goods.

In the January 12, 2005 Office Action at ¶ 4, p. 5, Merkle is cited as teaching "Selecting portion of clear text as a substitution box (S-box) in encrypting at least a portion of a second portion of clear text to produce encrypted text (see col. 2, line 52-col. 3, line 35)". However, similar to the discussion above regarding claim 1, Applicant respectfully submits that Merkle does not disclose or suggest a production server to use a portion of a first digital good as a substitution box (S-box) in encrypting at least a portion of a second digital good to produce a protected digital good as recited in claim 31.

With respect to Sirbu, Sirbu is cited in the May 5 Office Action at ¶ 4, p. 5 as teaching "a server production encrypts digital good; and a client to store and execute the protected digital good, the client being configure to evaluate the protected digital to determine whether the protected digital good has been tampered with". Applicant respectfully submits that Sirbu is not cited as curing, and does not cure, these deficiencies of Merkle.

For at least these reasons, Applicant respectfully submits that claim 31 is allowable over Merkle in view of Sirbu.

With respect to claim 32, given that claim 32 depends from claim 31, Applicant respectfully submits that claim 32 is likewise allowable over Merkle in view of Sirbu for at least the reasons discussed above with respect to claim 31.

With respect to claim 33, Applicant respectfully submits that, similar to the discussion above regarding claim 31, Merkle in view of Sirbu does not disclose or suggest decrypting at least a portion of a digital good by using another portion of the digital good as a substitution box (S-box) as recited in claim 33. For at least these reasons, Applicant respectfully submits that claim 33 is allowable over Merkle in view of Sirbu.

With respect to claims 34-36, given that claims 34-36 depend from claim 33, Applicant respectfully submits that claims 34-36 are likewise allowable over Merkle in view of Sirbu for at least the reasons discussed above with respect to claim 33.

Claims 7 and 14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Merkle in view of Chow and further in view of Sirbu. Applicant respectfully submits that claims 7 and 14 are not obvious over Merkle in view of Chow and further in view of Sirbu.

With respect to claim 7, claim 7 depends from claim 1 and Applicant respectfully submits that claim 7 is allowable over Merkle in view of Chow for at least the reasons discussed above with respect to claim 1. Applicant respectfully submits that Sirbu is not cited as curing, and does not cure, these deficiencies of Merkle in view of Chow. For at least these reasons, Applicant respectfully submits that claim 7 is allowable over Merkle in view of Chow and further in view of Sirbu.

With respect to claim 14, claim 14 depends from claim 8 and Applicant respectfully submits that claim 14 is allowable over Merkle in view of Chow for at least the reasons discussed above with respect to claim 8. Applicant respectfully submits that Sirbu is not cited as curing, and does not cure, these deficiencies of Merkle in view of Chow. For at least these reasons, Applicant respectfully submits that claim 14 is allowable over Merkle in view of Chow and further in view of Sirbu.

Applicant respectfully requests that the §103 rejections be withdrawn.

### **Conclusion**

Claims 1-9 and 11-36 are in condition for allowance. Applicant respectfully requests reconsideration and issuance of the subject application. Should any matter in this case remain unresolved, the undersigned attorney respectfully requests a telephone conference with the Examiner to resolve any such outstanding matter.

Respectfully Submitted,

Date:

5/27/05

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